

Applicants: Brethour *et al.*  
Application No. 10/712,269

**REMARKS**

Applicant respectfully requests reconsideration and further examination of the patent application under 37 C.F.R. § 1.111.

**Response to Objection of Drawings:**

The drawings were objected to under 37 CFR 1.84(a). Applicant has identified the drawing sheet having amended Figure 10 as being a replacement sheet.

**Response to Objection of Claims:**

Claims 8-18 and 32 were objected to because of informalities. Examiner indicated the limitation recited in dependent claims 8-18 was in a form inconsistent with a method claim. Examiner indicated that in claim 32, line 4, “impulse radio signal reflections” should be “reflection of the impulse radio signal”. Applicant has amended claims 8-10, 12-18, and 32 to address Examiner objections.

**Response to Rejections under 35 U.S.C. 103(a):**

Claims 6-11, 19-24, 32 and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ono (US Patent No. 5,157,687) in view of Bi (US Patent No. 6,515,977). Examiner states that with regard to claims 6 and 19, Ono teaches sampling circuitry (30) for sampling a plurality of impulse radio signal reflections (i.e. “paths”) and figure of merit determination circuitry (31). Examiner also states that with regard to claim 32, Ono teaches receiving a plurality of impulse radio reflections, sampling the plurality of impulse radio reflection, determining a plurality of figures of merit, determining a best figure of merit, and determining whether to exclude of said plurality of rake teeth. Examiner admits that Ono does not disclose that the figure of merit is dynamically determined and states that Bi et al. teaches

determining a figure of merit (i.e., the indication of signal quality) dynamically in the process of assigning and de-assigning fingers in a rake receiver. Examiner further states that because there is no training period, it is implicit that the determination is dynamic and that it would be obvious to one of ordinary skill in the art at the time of the invention was made to apply the teaching of Bi et al. to that of Ono in order to quickly adapt to changes in signal quality thereby improving data recovery.

Applicants respectfully traverse the rejection. Bi et al. appear to disclose techniques for de-assigning signals from the fingers of a rake receiver where more stringent standards are placed upon signals newly assigned to a finger that may be spurious and less stringent standards are placed upon mature signals that have proved themselves over time but may be experiencing only a temporary signal quality shortfall (see Abstract). Bi et al. describe a rake receiver technique whereby constituent signals are applied to one of four fingers in “well-known fashion” (Col. 6, lines 1-12). Bi et al. appear to disclose several different techniques each having in common that a threshold used to make a de-assign decision is changed “as a function of the duration that the signal has been assigned to the finger” (Col. 6, Lines 30-62). Bi et al then describe each of the techniques in detail. In relation to Fig. 6, Bi et al describe how “the threshold above which the signal must remain in order not to be de-assigned begins at the value,  $R_1+R_2$ , but decreases logarithmically towards the asymptote  $R_2$ ” and note that “had a fixed threshold value at  $R_1+R_2$  been the standard, the signal would have been de-assigned much earlier” (Col. 6, Line 63 – Col. 7, Line 7). In relation to Fig. 7, Bi et al describe a “threshold above which the signal must remain in order not to be de-assigned begins at the value,  $R_1$ , but decreases in discrete steps according to a schedule...” and then notes that for the signals shown in Fig. 6 and Fig. 7, had the threshold,  $R$ , been fixed, as in the prior art, both signals would have been de-assigned earlier...” (Col. 7, Lines 8-21). In a similar manner, each of the other techniques described by Bi et al. involve an initial threshold that changes as a function of the duration that the signal has been assigned to the finger such that older signals have less stringent standards to meet in order to not

be de-assigned from a finger. It is respectfully submitted that Bi et al. does not in any way disclose how the initial threshold values (e.g.,  $R_1+R_2$ ) are determined and instead is only concerned with how to change or affect initial threshold values such that over time signals that have been associated with a finger longer are favored over newer signals. Applicant submits that because each of the techniques of Bi et al. require an initial threshold value and because Bi et al. directly compare the time-varying thresholds used by the techniques to the fixed thresholds of the prior art, which one with ordinary skill in the art at the time of in Bi et al. invention would have understood would have been determined using a rake training period, that Examiner's characterization of Bi et al. not having a training period is incorrect. In fact, Bi et al., does require a rake training period. This is because the de-assigning techniques of Bi et al. are all based on initial threshold values that in the prior art have been determined using a rake training period. Thus, Bi et al. does not determine at least one figure of merit ... for reflections dynamically based upon ... samples **without considering an expected impulse radio characteristic determined during a rake training period**, as required by the claimed invention. Because such claimed limitation is not taught or suggested by Ono and because Bi et al. fail to disclose the limitation, Applicant respectively submits that the grounds for rejection have been properly traversed.

Claims 12-16 and 25-29 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ono (US Patent No. 5,157,687) in view of Bi (US Patent No. 6,515,977), as applied to claims 6 and 19, and further in view of Miura (US Patent No. 6,658,046). Applicant respectively submits that the grounds for rejection have been properly traversed for at least those reasons given above.

Claims 17, 18, 30 and 31 are rejected under 35 U.S.C 103(a) as being unpatentable over Ono (US Patent No. 5,157,687) in view of Bi (US Patent No. 6,515,977), as applied to claims 6 and 19, and further in view of Saints (US Patent No. 6,903,554). Applicant respectively submits

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that the grounds for rejection have been properly traversed for at least those reasons given above.

**Conclusion:**

Applicants respectfully submit that in view of the foregoing, all of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Therefore, the Applicants respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn.

If the Examiner believes, for any reasons, that further communication will expedite prosecution of this application the Examiner is invited to telephone the undersigned at the number provided.

Accordingly, in view of the above amendments, it is believed that the remaining claims of the present invention are in condition for allowance.

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Respectfully submitted,

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Application No. 10/712,269

**AMENDMENTS TO THE DRAWINGS**

Figure 10 is amended as shown in Appendix A. More specifically, Figure 10 has been appropriately marked to identify it as a replacement sheet. As set forth in the Remark section no new matter is introduced by this amendment.